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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WAMBACH, MARGARET R	

ART UNIT	PAPER NUMBER
2816	

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/604,550	ANAND ET AL.	
	Examiner	Art Unit	
	Margaret R Wambach	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: On page 9 of the specification, element 106 is termed a "multiplexor", however, in light of applicant's remarks which identify 106 as providing diverging paths, application of this term to element 106 is repugnant to its normal usage. More particularly, "multiplexer" is defined as "A device that allows two or more signals to be transmitted simultaneously on a single carrier wave, communications channel, or data channel." This definition comes from "The Illustrated Dictionary of Electronics" sixth edition, Stan Gibilisco, TAB Books, 1994. Element 106 does not have a single output nor does it have two or more inputs. Further, it is noted that applicant's spelling of the term is not the most commonly used and would impede successful application of electronic search tools should the instant application mature to a patent.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> *The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.*

Claims 1-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the invention.

According to MPEP 2164.01 and 2164.01(a), the standard for determining whether the meets the specification enablement requirement was cast in the Supreme Court decision of Mineral Separation v. Hyde, 242 U.S. 261, 270 (1916) which postured the question: is the experimentation needed to practice the invention undue or unreasonable? That standard is still the one to be applied. In re Wands, 858 F.2d 731, 737, 8 SPQ2d 1400, 1404 (Fed. Cir. 1988).

Before applying this test, it is necessary to explain how the examiner is interpreting the claim language, which, from a reading of Applicants' 2/10/05 remarks, appears to be at odds with their interpretation. All of the independent claims state that data is observed "within" one or more shift registers and that is accomplished "without altering said data". First of all, the disclosure makes clear that the data is removed from the shift register while it is observed in an external location and then later replaced into the shift register. Thus, the specification does not enable observing data "within" the shift register at all. This is the first hurdle Applicants must overcome. Further, it is clear from Applicant's remarks that applicant is defining "without altering" in a manner that is repugnant to its ordinary meaning. More particularly, Webster's Ninth New Collegiate Dictionary defines the word "alter" as "to make different without changing into something else". Accordingly, to observe data without altering it would mean that the data was at no time made different. Simply shifting data from one cell of a shift register to the next makes the data within the shift register different. If a low level is shifted into a cell that

formerly had a high level then the shift register values have been changed. Even when the data has circulated all the way through the shift register, through a wire and through "a control device" presented as a blank box, all of which, in the real world, have resistance, capacitance and inductance and then, ostensibly, ends up back in its earlier position within the shift register, there is no conceivable way that the signal amplitude would not have been degraded. In response to the examiner's concerns regarding diverging wiring paths degrading the data amplitude, Applicants responded that connections which "distribute the same signal to multiple points" are "well known". That may be; however, the claims require more: the connections must be a conduit that distribute the data within the shift register without altering it. Well-known connections which split a signal among two paths must then amplify the two resultant signals such that the same amplitude is maintained. If a signal is diminished and then amplified, it has been altered. It does not matter if the alterations restore the signal to its original state; alterations have still taken place. Further, capacitive and inductive properties of the signal path would alter the shape of a signal, impacting on the level that eventually is shifted back into the shift register. Further, claims 4 and 12 expressly require that one or more bits "change". The specification does not disclose how to "change" data "without altering" it. Claims 18 and 25 expressly recite "altering" the data! The specification does not, and most likely cannot, teach how to alter the data without altering it. Likewise, claims 5, 13, 19, 26 and 32 similarly recite changing data in the shift register by sending "a unique marker" through it. Applicants explain in their remarks that this process takes place "before any data is stored in the shift register".

This is taken to mean that the length of the shift register is determined before the observation process recited in the independent claims occurs. However, Applicants' interpretation is contrary to the plain meaning of the dependent claims in question which carries with it all the limitations of the claims from which they depend. The claims clearly state forth the function of the circuit – "for observing data" -- and the words occur in a context which is freighted with similar meaning and in no way recite that an operation takes place before the observation of data occurs. Thus, Applicant must provide enablement, simultaneously, for unaltered data that is overwritten with a unique marker. Similarly, the word "maintains" in claim 9 carries with it the contradictory implication that the unaltered data will be altered in order to maintain the same level.

In view of the remarks of Applicants' 2/10/05 Amendment, it appears as if Applicant means that data is not altered if it is, in the end, restored to its original state. As explained above, that interpretation is repugnant to the meaning of the word "altered" and it is suggested that Applicants amend the claims to more accurately describe what the invention actually does.

Now that the examiner's interpretation of the claim language has been explained, the factors to be considered when determining whether 'there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue" ' will be applied to the claims:

(A) The breadth of the claims

The claims are not of a sufficient breadth to enable one to make and use the claimed invention. Indeed, in view of the apparent contradictions of the

claimed recitations described above, it is questionable whether the claims could be narrowed to overcome what may be fatally defective language. That said, the claims provide very little detail of the structure which purportedly accomplishes Applicants' claimed objectives.

(B) The nature of the invention

The invention is recited as an apparatus or the method of using the same. It is of a nature that, should it function in the manner recited in the claims, the disclosure should be capable of enabling the invention in concrete terms. The disclosure does not. Experimentation exceeding a complex level would be necessary to enable the present invention, if that indeed is possible.

(C) The state of the prior art

Inventions attempting to observe data with little impact on the data are known. However, what Applicants attempt – to have no impact whatsoever – is not known and the means involved to achieve this end cannot be extrapolated from the prior art but must be provided by the disclosure itself. In its current state, the disclosure does not enable the claimed invention even weighing the bank of knowledge drawn from related prior art.

(D) The level of one of ordinary skill

Similarly, the level of one of ordinary skill in the art is drawn from his or her knowledge of the related prior art and the electrical arts in general. In its current state, the disclosure does not enable the claimed invention even weighing the bank of knowledge drawn from related prior art and the electrical arts in general.

(E) The level of predictability in the art

As stated above, the examiner suspects that Applicants' contradictory claim recitations are impossible to accomplish, and thus, providing for the same would require a high degree of unpredictability in this particular instance even if the art normally would be of a more predictable character.

(F) The amount of direction provided by the inventor

The disclosure provides no direction which explains how the claimed invention can possibly accomplish what is stated that it accomplishes.

(G) The existence of working examples

The examiner knows of no working examples of the claimed invention.

(H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

Again, the quantity of experimentation would be vast if not limitless. For instance, how can data be observed "within" a shift register by first taking the data out of the said shift register? How can a signal not be altered when it is effectively split and subjected to capacitive and inductive effects? How can a signal remain unaltered when the claim language later specifically requires that it is altered or changed?

In view of the forgoing discussion, the claims cannot be fairly viewed as having been described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret R. Wambach whose telephone number is (571)272- 1756. The examiner can normally be reached on Monday, Tuesday, Thursday and Friday 6am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on (571)272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Margaret R Wambach
Primary Examiner
Art Unit 2816

mrw